Abstract

The challenge of sustainability calls for a more inclusive approach to the development of science and technology. A broader, multi-framing perspective has been proposed, revealing the complexity of the problems, as well as multiple actors' perspectives and framings, intended to achieve a more democratic process of knowledge construction, and as consequence, results that are more socially robust. Therefore, it is relevant to understand the role of scientific expert knowledge and its interplay with other types of expertise. The purpose of this research is to understand these interactions, using the concept of expertise as well as the idea of coproduction during the development of a technology. I look at a case study of a renewable energy innovation project and I analyze how local people's perspectives interact with the developers' ones. This case study corresponds to the development of a microgrid in the rural village of Huatacondo, Chile, developed by the Center of Energy in the University of Chile. Through action research I analyze the dynamics of knowledge creation in the development of energy project, focusing on the role of engineers as well as how their perception changes through the process.

The adoption of participatory approaches on energy innovation opens-up the research process to encompass a project on its full socio-technical dimension. Social and cultural constructions around technologies –in this case electricity– are shared among stakeholders, and affect ontological aspects of the technological design. This research highlights the importance of broader definitions of expertise and the importance of interactional expertise as a connecting actor between stakeholders. Interactional expertise and informal situations allows process of social learning to be promoted within the project, and as a consequence, different framings and perspectives are encompassed in the project design; I also describe how the process of co- production occurs in different ways depending on the problem and the stakeholder's dynamics.

Keywords: expertise, uncertainty, social learning, renewable energy.

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